GA 1.13:NSIAD-90-155

GAO

United States General Accounting Office

Report to Congressional Requesters

COMPLETED
38

May 1990

CHEMICAL WEAPONS

Obstacles to the Army's Plan to Destroy Obsolete U.S. Stockpile

GAO/NSIAD-90-155

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-238728

May 24, 1990

The Honorable John Glenn
Chairman, Committee on Governmental
Affairs
United States Senate

The Honorable John Conyers, Jr.
Chairman, Legislation and National
Security Subcommittee
Committee on Government Operations
House of Representatives

The Honorable Earl Hutto
Chairman, Subcommittee on Readiness
Committee on Armed Services
House of Representatives

This report responds to your requests that we review the Department of Defense's Chemical Stockpile Disposal Program and determine the status of its efforts to destroy obsolete chemical weapons.

Unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days. At that time, we will send copies to the Chairmen of the House and Senate Committees on Armed Services and on Appropriations, the Secretaries of Defense and the Army, the Director of the Office of Management and Budget, and other interested parties.

This report was prepared under the direction of Richard Davis, Director, Army Issues, who may be reached on (202) 275-4141 if you or your staff have any questions. Other major contributors are listed in appendix I.

Frank C. Conahan
Assistant Comptroller General

Executive Summary

Purpose

The United States has stockpiled chemical weapons since World War I. In November 1982, after determining that most of the existing stockpile had little or no military value, the Department of Defense began seeking congressional approval for a chemical weapons modernization program. In conjunction with its authorization to develop modernized weapons, the Congress, in November 1985, directed the Department of Defense to destroy the existing stockpile.

The Chairmen of the Subcommittee on Readiness, House Committee on Armed Services; Legislation and National Security Subcommittee, House Committee on Government Operations; and the Senate Committee on Governmental Affairs asked GAO to determine the status of the Army's chemical stockpile disposal program.

Background

The chemical weapons to be destroyed contain agents that can blister the skin or disturb the nervous system. In fiscal year 1988, the Army, as the Defense Department's lead service in chemical matters, constructed a high-temperature incineration facility to destroy chemical weapons on Johnston Atoll in the Pacific Ocean. Also in 1988, the Army announced that it planned to build similar disposal facilities at each of the eight chemical munitions storage sites in the continental United States—Tooele, Utah; Anniston, Alabama; Pine Bluff, Arkansas; Umatilla, Oregon; Pueblo, Colorado; Newport, Indiana; Lexington-Blue Grass, Kentucky; and Aberdeen, Maryland. The Army began to construct the Tooele plant in late fiscal year 1989 and plans to start construction of the Anniston plant in fiscal year 1991.

The disposal program, by law, is to be completed by April 30, 1997. The program must conform to the Environmental Protection Agency's standards for hazardous waste disposal. Prior to constructing its disposal facilities, the Army must obtain various environmental permits. The Environmental Protection Agency has delegated the permit-approval function to the individual states.

Results in Brief

The Army's cost estimates to complete the on-site disposal program have doubled since 1985—from $1.7 billion to over $3.4 billion—and will likely continue to escalate.

The Army probably will not complete its destruction of the stockpile by the congressionally mandated date of April 30, 1997. The Army believes that meeting the 1997 date is in jeopardy because of (1) more stringent

than anticipated environmental requirements to operate its first continental U.S. incineration plant, (2) program budget cuts, and (3) operational delays at its initial disposal plant on Johnston Atoll. GAO believes that the Army's disposal of weapons by the 1997 date is further jeopardized by strong citizen opposition to these plants in some states and the Army's failure to allow sufficient time to obtain environmental permits. Moreover, because of the probable delay in obtaining the required environmental permit for the Anniston facility, GAO believes that most of the $123 million requested by the Army for use in fiscal year 1991 may not be needed until fiscal year 1992

Principal Findings

Cost Estimates Are Likely to Increase

In October 1985, the Army's life-cycle cost estimate to destroy its chemical weapons stockpile at the eight storage sites and at the Johnston Atoll plant was $1.7 billion. In March 1988, information available to the Army showed a total program cost of $3.4 billion. Although the Army is not expected to release a revised program cost estimate until the later half of fiscal year 1990, the total cost is likely to increase further because current construction, equipment, and personnel requirements are at least $300 million greater than estimated in March 1988.

Army Not Likely to Meet Disposal Completion Date

The Army believes that it probably will not complete the stockpile disposal by April 30, 1997. The Utah environmental permit requires the Army to periodically operate the disposal plant at 50 percent capacity while environmental test data is analyzed. The Army did not expect this restriction. Second, a $37 million shortfall in fiscal year 1990 funding delayed the acquisition of equipment for the Utah plant. In addition, operational delays at the initial plant on Johnston Atoll have adversely affected the Army's ability to incorporate lessons learned at this plant into the design and construction plans for the continental U.S. disposal facilities.

The Army will also likely encounter obstacles in obtaining environmental permits and dealing with opposition in some states where disposal facilities are planned. The Army's construction schedule, which must be followed to achieve the 1997 completion date, does not allow state agencies sufficient time to review applications and issue the required environmental permits. In addition, citizen opposition in Indiana, Kentucky,

and Maryland to the disposal facilities makes it increasingly unlikely that the Army will complete disposal operations as scheduled.

Funds Requested for Fiscal Year 1991 May Not Be Needed Until Fiscal Year 1992

Because of a probable delay in obtaining required environmental permits for the Anniston facility, most of the $123 million requested by the Army for use in fiscal year 1991 may not be needed until fiscal year 1992.

The Army's current expectations include plans for soliciting bids in March 1991 and awarding a construction contract for the Anniston facility in September 1991. This plan is based on the assumption that the state will issue a required environmental permit 15 months after the application is resubmitted to the state. On the basis of comments provided by state officials concerning the time needed to process permit applications, the Army will not be allowed to begin construction until late fiscal year 1992. Accordingly, the $64.5 million requested for construction and some of the $58.4 million requested for procurement of equipment probably will not be needed until fiscal year 1992.

Unless the Army establishes realistic target dates for issuance of required environmental permits, bids for construction contracts could be prematurely solicited and equipment could be obtained before it is needed.

Recommendations

GAO recommends that the Secretary of the Army direct procurement officials not to solicit bids for the construction contracts or issue equipment purchase orders for any additional facilities until realistic dates can be established for receipt of all required environmental permits.

Other recommendations that are designed to improve the management and execution of the program are included in chapters 2, 3, 4, and 5.

Agency Comments

As requested, GAO did not obtain official agency comments on this report. However, it discussed information obtained during the review with agency officials and included their views where appropriate.

BLANK PAGE

Contents

Executive Summary		2
Chapter 1 Introduction		8
	Background	9
	Management Structure of the Disposal Program	11
	Johnston Atoll Disposal Program	11
	Incineration Process	12
	Objectives, Scope, and Methodology	13
Chapter 2 Projected Program Costs Have Increased and Are Likely to Continue to Grow		15
	Reasons for Cost Increases	15
	Costs Are Expected to Increase Further	16
	Conclusions	19
	Recommendation	19
Chapter 3 The Army's Chemical Stockpile Disposal Operations May Not Be Completed on Time		20
	Events Influencing the Army's Belief That the Completion Date Will Not Be Met	20
	Environmental Requirements Must Be Met Before Construction Can Begin	21
	Army's Schedule for Obtaining Environmental Permits Is Unrealistic	23
	Community Opposition and Environmental Requirements Could Delay the Construction of Additional Sites	25
	Funds Requested for Fiscal Year 1991 May Not Be Needed Until Fiscal Year 1992	26
	Conclusions	27
	Recommendations	27
Chapter 4 The Army's Plans to Upgrade Emergency Preparedness Before the Start of Disposal Operations		29
	Origins of the Emergency Preparedness Program	29
	Previous Delays in Program Execution	30
	Conclusions	31
	Recommendations	32

Chapter 5 Chemical Stockpile Disposal Program Facilities Could Be Used for Other Purposes 33
Legislation Prohibits the Use of CSDP Facilities for Other Purposes 33
Congressionally Directed Study of Other Possible Uses 33
Disposal Facilities Could Be Used for Other Purposes 34
Conclusions 35
Recommendations 35

Appendix
Appendix I: Major Contributors to This Report 36

Tables
Table 1.1: Construction and Operation Schedules 11
Table 2.1: Change in Total Estimated Program Cost 16
Table 2.2: Increased Equipment Cost Estimates 18

Figures
Figure 1.1: Storage Locations in the Continental United States 9
Figure 1.2: Incineration Process for Chemical Munitions 12

Abbreviations

CSDP	Chemical Stockpile Disposal Program
DOD	Department of Defense
EPA	Environmental Protection Agency
GAO	General Accounting Office
RCRA	Resource Conservation Recovery Act

Introduction

In November 1985, the Congress directed the Department of Defense (DOD) to destroy the U.S. stockpile of obsolete chemical munitions and agents. The Congress required DOD to establish a management organization within the Department of the Army to carry out the Chemical Stockpile Disposal Program (CSDP). The chemical munitions to be destroyed contain three types of lethal agents: GB, VX, and H. The "nonpersistent" nerve agent GB and the "persistent" nerve agent VX disrupt the nervous system and lead to the loss of muscular control and usually death.[1] Mustard agents (the H series) blister the skin and can be lethal in large amounts.

These three types of chemical agents are contained in various munitions. M55 rockets contain GB or VX; M23 mines and spray tanks contain VX; bombs contain GB; and 105-mm, 155-mm, 4.2-inch, and 8-inch projectiles contain GB, VX, or HD. All three agents are stored in 1-ton containers for possible future transfer to chemical munitions. None of these agents or munitions have been manufactured since 1968. All are at least 21 years old, and some are more than 45 years old.

Most of the chemical agent and munitions stockpile is stored at eight Army depots in the continental United States: at Anniston, Alabama; Pine Bluff, Arkansas; Pueblo, Colorado; Newport, Indiana; Lexington, Kentucky; Aberdeen, Maryland; Umatilla, Oregon; and Tooele, Utah. A portion of the stockpile is stored at two overseas locations. Figure 1.1 shows the storage locations in the continental United States.

[1] "Nonpersistent" agents vaporize and dissipate readily, while "persistent" agents remain in liquid form for several days.

Figure 1.1: Storage Locations in the Continental United States

Umatilla, Oregon, Depot Activity
Newport, Indiana, Army Ammunition Plant
Aberdeen, Maryland, Proving Ground
Lexington-Blue Grass, Kentucky, Army Depot
Anniston, Alabama, Army Depot
Tooele, Utah, Army Depot
Pueblo, Colorado, Depot Activity
Pine Bluff, Arkansas, Arsenal

Background

Before 1969, the Army, as DOD's lead service in chemical matters, disposed of obsolete lethal chemical munitions by various means, including deep ocean dumping and open-pit burning. However, in a 1969 report, the National Academy of Sciences concluded that ocean dumping should be avoided and alternative disposal methods should be studied. In 1972, the Congress passed the Marine Protection, Research and Sanctuaries Act (Public Law 92-532), which prohibited any further ocean disposal of chemical agents.

After the enactment of Public Law 92-532, the Army began researching two disposal technologies: one involving chemical neutralization and the other involving high-temperature incineration. In 1984, the National

Academy of Sciences concluded that of the two disposal processes being considered, high-temperature incineration was the more desirable approach. The Academy based its conclusion on tests that had shown that the neutralization process was more costly and produced larger quantities of waste than previously anticipated.

Public Law 99-145, which directed DOD to destroy the existing stockpile by September 30, 1994, also specified that the disposal program should provide for the maximum protection of the environment, the general public, and personnel involved with the actual destruction of chemical munitions. The law also stipulated that (1) disposal plants should be designed solely for the destruction of chemical munitions, (2) the facilities could not be used for any other purpose, and (3) when the stockpile was destroyed, the facilities would be cleaned, dismantled, and disposed of in accordance with applicable laws and regulations. Further, the law required that DOD develop a comprehensive disposal plan, including milestone dates and a description of the disposal method(s) to be used.

In March 1986, the Army submitted to the Congress a disposal plan, which considered the costs and problems associated with three disposal alternatives: (1) transferring and disposing of the U.S. chemical stockpile at one national disposal site, (2) transferring and disposing of the stockpile at two regional sites, or (3) simultaneously building and operating separate disposal plants at the eight storage locations.

In February 1988, the Army formally announced that on-site incineration at the eight locations was the preferred alternative. The Army also said that the on-site destruction process would be accomplished by disassembling and incinerating the munitions.

In March 1988, the Army published its plan and schedule for constructing and operating disposal plants at the eight storage sites. The 1988 plan, unlike the 1986 plan, included a staggered construction schedule, providing for construction to begin on one plant in fiscal year 1989, on three plants in fiscal year 1991, and on four plants in fiscal year 1992. On the basis of this schedule, the Army notified the Congress that the completion of the disposal program would be extended from September 30, 1994, to April 30, 1997. In September 1988, the Congress passed Public Law 100-456, which authorized the April 30, 1997, completion date.

Table 1.1 summarizes the Army's schedule, as of August 1989, for construction, preoperational testing, and disposal operations.

Table 1.1: Construction and Operation Schedules (as of August 1989)

Storage site	Construction	Preoperational testing	Disposal operations
Tooele, Utah	08/89 to 01/92	02/92 to 01/93	02/93 to 04/97
Pine Bluff, Arkansas	09/91 to 02/94	03/94 to 02/95	03/95 to 12/96
Umatilla, Oregon	09/91 to 02/94	03/94 to 02/95	03/95 to 11/96
Anniston, Alabama	09/91 to 02/94	03/94 to 02/95	03/95 to 04/97
Pueblo, Colorado	05/92 to 10/94	11/94 to 10/95	11/95 to 02/97
Newport, Indiana	05/92 to 03/94	04/94 to 03/95	04/95 to 07/96
Aberdeen, Maryland	05/92 to 03/94	04/94 to 03/95	04/95 to 07/96
Lexington-Blue Grass, Kentucky	09/92 to 02/95	03/95 to 02/96	03/96 to 02/97

Management Structure of the Disposal Program

Public Law 99-145 directed the Secretary of Defense to establish a management organization within the Department of the Army to be responsible for the CSDP and to designate a general officer to direct the program. The law requires the Secretary of Defense to provide a report to the Congress each year by December 15 regarding the CSDP activities for the preceding fiscal year ending on September 30. The Army has complied with this annual reporting requirement.

The Army's management organization is headed by the Program Manager for Chemical Demilitarization, who is located in the Edgewood area of Aberdeen Proving Ground, Maryland, and reports to the Office of the Assistant Secretary of the Army for Installations, Logistics, and the Environment. The Program Manager is responsible for providing technical, engineering, and direct management control. The Deputy for Chemical Demilitarization, located in the same office, is responsible for providing program policy and oversight.

Johnston Atoll Disposal Program

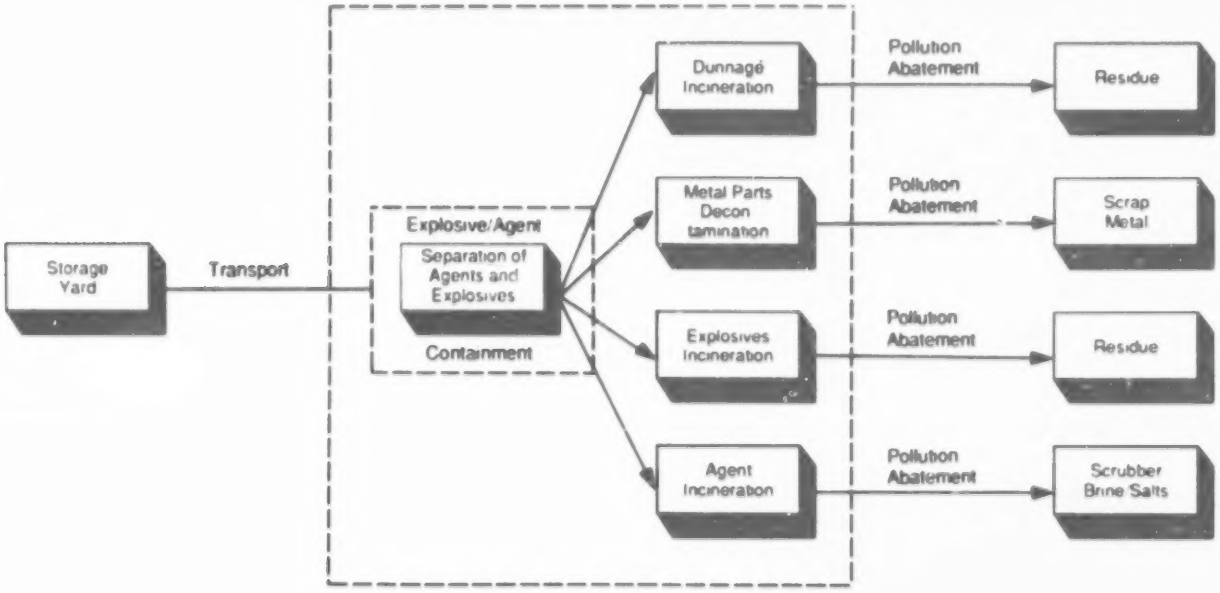
The Army, in fiscal year 1988, completed construction of a prototype disposal facility for the on-site incineration of chemical munitions and agents currently stored on Johnston Atoll in the Pacific Ocean. The Army's March 1988 implementation plan stated that a 16-month operational verification test program would be conducted at the Johnston Atoll plant starting in August 1989. Further, the plan stated that the Army would delay the completion of most continental U.S. plant designs and the acquisition of most equipment until the Johnston Atoll operational verification tests were completed. Public Law 100-456, enacted in September 1988, specifies that equipment prove-out and system testing at stateside disposal sites cannot start until operational data from the Johnston Atoll facility has been fully analyzed. The start of operational

verification testing on Johnston Atoll has been delayed for 9 months—until May 1990.

Incineration Process

The high-temperature incineration process involves a disassembly procedure, which breaks down munitions into their component parts. Munitions will be disassembled automatically by specialized equipment. Once disassembled, the agent and the chemical munition components are burned separately in four specially designed furnaces. The liquid furnace destroys the lethal agent. The deactivation furnace burns explosive and propellent materials. The metal parts furnace decontaminates projectile and bulk munition bodies by evaporating and burning the residual agent. The trash and dunnage created by the operations are destroyed in the dunnage incinerator. Figure 1.2 illustrates the process.

Figure 1.2: Incineration Process for Chemical Munitions



Each of the four furnaces has its own pollution abatement system, which cools and scrubs the exhaust gases and removes particles so that the gases can be safely released into the atmosphere. Concentrated brine from the scrubber towers is placed in rotary double-drum dryers to evaporate the water. The remaining dried salts are classified as hazardous waste because they contain traces of heavy metals. They are placed in containers and disposed of in approved landfills.

The high-temperature disassembly technology is based on the chemical agent and munition incineration experience that the Army gained from its operations at the Rocky Mountain Arsenal from 1972 to 1976 and at the Chemical Agents Munitions Disposal System pilot-scale plant at the Tooele Army Depot from 1979 to 1989. The Army has also benefited from DOD's experience in the incineration of conventional ammunition and from the private sector's experience with the incineration of hazardous materials.

Objectives, Scope, and Methodology

The Chairmen of the Subcommittee on Readiness, House Committee on Armed Services; Legislation and National Security Subcommittee, House Committee on Government Operations; and the Senate Committee on Governmental Affairs asked us to determine the status of DOD's program to destroy the stockpile of obsolete chemical munitions and agents stored within the continental United States and on Johnston Atoll in the Pacific Ocean. The Committees also requested that we identify problems that could impede the orderly and timely completion of the program. This report discusses overall program cost estimates and problems concerning the planned construction of disposal sites within the continental United States. The Johnston Atoll disposal program will be discussed in a separate report.

Officials at Headquarters, Department of the Army, and the Deputy for Chemical Demilitarization and his staff in the Office of the Assistant Secretary of the Army for Installations, Logistics, and the Environment provided us information on program policy and oversight.

At the Office of the Program Manager for Chemical Demilitarization in the Edgewood area of Aberdeen Proving Ground, Maryland, we obtained and analyzed detailed program documentation from officials responsible for providing technical and day-to-day management for the chemical demilitarization program.

In visits to four of the planned eight continental U.S. construction sites for future chemical disposal facilities—Pine Bluff Arsenal, Arkansas; Anniston Army Depot, Alabama; Lexington-Blue Grass Army Depot, Kentucky; and Aberdeen, Maryland—we obtained documentation and a general overview of specific problems or concerns that may affect the future disposal operations and the status of installation planning needed to support disposal operations at these sites.

Our review included visits to the four sites because (1) the Army planned to request construction funding in fiscal year 1991 for two of the sites (Pine Bluff and Anniston) and (2) the communities have opposed the Army's decision to locate disposal facilities at two of the sites (Aberdeen and Lexington-Blue Grass).

In addition, interviews were conducted and documentation was obtained from responsible officials representing the Environmental Protection Agency (EPA) and the Federal Emergency Management Agency regional offices located in Philadelphia, Pennsylvania, and Atlanta, Georgia. These regions are responsible for providing environmental and preparedness oversight in Maryland, Alabama, and Kentucky. EPA provides management oversight of state regulatory agencies, and the Federal Emergency Management Agency serves as a conduit for Army funds provided to state and local governments for emergency preparedness programs.

Finally, we interviewed officials and obtained pertinent documentation from state and local agencies responsible for environmental regulations and emergency preparedness at the four future disposal sites because state agencies review and approve environmental permit applications and county organizations develop and manage emergency preparedness programs.

Our review was conducted from April to December 1989 in accordance with generally accepted government auditing standards. We did not obtain written agency comments but did discuss our findings with Army and DOD officials. Their views are included in the report where appropriate.

Projected Program Costs Have Increased and Are Likely to Continue to Grow

Total program cost estimates to destroy the Army's stockpile of chemical munitions and agents have doubled since 1985. During our prior examination of the Chemical Stockpile Disposal Program, Army officials told us that the estimated cost, as of October 1985, for on-site destruction of the chemical munitions stockpile at the eight sites in the continental United States and a facility at Johnston Atoll in the Pacific Ocean was about $1.7 billion.[1] In March 1988, the Army reported to the Congress that an additional $3.1 billion would be required to complete the disposal program, exclusive of funds already appropriated.[2] Although revised estimates will not be available until the later half of fiscal year 1990, information already available from the Army shows that total program costs will continue to grow because the current construction, equipment, and support personnel costs are at least $300 million greater than costs the Army used to develop the March 1988 estimate.

Reasons for Cost Increases

The Army's October 1985 estimate of approximately $1.7 billion was revised upward to almost $2.0 billion in March 1986. The Army attributed most of this increase to the addition of program support costs, which were not included in the October 1985 estimate. These program support costs include administrative expenses for program management, medical support, engineering support, and technology development.

In March 1988, information available to the Army indicated that over $3.4 billion would be required to carry out the disposal program. Army officials told us that about $544 million of the additional cost could be attributed to the expected impact of inflation on future requirements.[3] Other projected increases totaling about $345 million are the result of adding cost elements not included in the earlier estimates. The remaining amount ($546 million) results from prior year expenditures and increased cost estimates for facility construction and acquisition, installation, and testing of plant equipment. The estimated cost growth for construction and equipment resulted from consideration of later designs and actual costs incurred for the Johnston Atoll project. (See table 2.1.)

[1]Chemical Munitions: Cost Estimates for Demilitarization and Production (GAO/NSIAD-86-1FS, Oct. 31, 1985). This estimate was in fiscal year 1985 constant dollars.

[2]The Army's March 1988 estimate to complete the disposal program of $3.136 billion did not include $271 million appropriated in fiscal years 1986 and 1987 for construction and equipment. Inclusion of these funds increases the projection of total program cost as of March 1988 to over $3.4 billion.

[3]The October 1985 and March 1986 estimates were based on fiscal year 1985 and 1986 constant dollar requirements and did not include allowances for inflation.

Table 2.1: Change in Total Estimated Program Cost

Dollars in millions

Cost element	Amount
Program cost projection as of October 1985	$1,700.0
Program support cost	272.0
Impact of inflation	544.0
Added cost elements	
On-site transportation	119.0
Emergency preparedness	114.0
Alternative technology development	80.0
European stockpile movement	32.0
Prior year expenditures and other cost increases	546.0
Total disposal program cost as of March 1988	**$3,407.0**

The majority of the added cost elements resulted from program enhancements that were designed, in part, to respond to concerns for the maximized safety of the public and of personnel involved in the stockpile destruction. For example, the revised estimates reflect the added cost to design and acquire special munitions transport containers to minimize the risk of munition damage and the accidental release of agents into the atmosphere. Also, the revised estimates provided funding for a new program requirement to upgrade emergency response capabilities in communities surrounding the disposal sites. This emergency response upgrade program is discussed in more detail in chapter 4. In addition, the Army's March 1988 estimate includes the cost of developing an alternative disposal technology, which features munitions freezing, crushing, and high-temperature incineration.[4] The revised estimates also provided for the shipment and disposal of chemical stockpile items currently stored in Europe.

Costs Are Expected to Increase Further

Army officials believe that the costs of constructing and operating eight continental U.S. disposal facilities will continue to increase because they expect construction, equipment, and personnel costs to be higher than estimated in March 1988.

[4]This technique, which is commonly referred to as "cryofracture," was intended to provide a backup to the munitions disassembly and high-temperature incineration process that the Army selected as its primary method of disposal.

To provide a basis for its budget requests for fiscal years 1992 to 1997, the Army, in December 1989, established a task force to update and document program cost estimates. The Army expects to publish a revised program estimate during the later part of fiscal year 1990.

Army officials told us that if funds are available, an attempt may be made to develop a computerized system for tracking future changes in program costs. Such a system could enable the Army to track its program expenditures and analyze the causes of cost growth.

Construction Costs

The Army Corps of Engineers recently developed construction cost estimates for each site. As of September 1989, construction cost estimates totaled $351 million for the eight U.S. sites, an increase of about $66 million over the March 1988 estimate.

Army program management officials told us that the increased construction costs could be partly attributed to newly identified requirements for the construction of a container-handling building to off-load and store on-site transport containers in an environmentally sealed building. Also, the revised estimates are based on the cost of the completed facility design for the lead continental U.S. site (Tooele, Utah) rather than the partial design that was available when the March 1988 estimate was prepared. Lastly, the updated construction estimates were based on labor costs for the specific geographic locations.

Equipment Costs

Although final equipment cost estimates have not yet been developed because site-specific designs are not complete, the Army has developed revised estimates that indicate that the total equipment acquisition and installation costs could increase by more than $197 million over the published March 1988 program cost estimate. Table 2.2 compares equipment cost estimates for each site.

Table 2.2: Increased Equipment Cost Estimates

Dollars in millions

Site	Estimated cost March 1988	Estimated cost September 1989	Increase
Training facility[a]	$23 5	$28 8	$5 3
Tooele	105 5	155 5	50 0
Anniston	95 0	122 9	27 9
Umatilla	109 3	133 7	24 4
Pine Bluff	65 1	84 0	18 9
Pueblo	94 8	120 8	26 0
Newport	61 0	67 2	6 2
Aberdeen	56 0	69 1	13 1
Lexington	92 4	118 1	25 7
Total	**$702.6**	**$900.1**	**$197.5**

[a]Training facility is located at Aberdeen Maryland

Personnel Costs

The Army requested that its depots determine how many supplemental personnel will be needed to support disposal planning and operations. The depots are determining how many more support personnel will be needed than originally estimated. For example, the March 1988 estimates assumed that the Anniston depot would need to hire about 68 support personnel. However, Anniston depot representatives provided us with documentation that indicates they will need to employ, on average, 99 support employees starting in fiscal year 1992 through scheduled program completion in fiscal year 1997.

At an average cost of $35,000 per staff-year, employing the additional 31 people for 6 years could escalate costs by about $6.5 million for this site alone. These employees will be needed to transport munitions and chemical agents from the storage sites to the disposal plant, act as a supplement to the existing security forces, and perform laundry services. The Army understated its initial personnel support estimates because it did not accurately estimate the numbers of transport workers needed for transporting munitions in the on-site containers, which are designed to enhance the accident-free movement of munitions.

Army officials told us that the number of contractor-employed personnel needed to operate the disposal plant will also increase in comparison to the original plan. For example, the experience gained from the Johnston Atoll facility has shown that greater-than-expected numbers

of employees will be needed during the equipment installation and testing phase. The program management office also plans to hire a program integration contractor to monitor the progress of the operating contractor and to provide support to Army staff. Since the Army only recently developed this concept, costs for the program integration contractor were not included in the March 1988 estimates.

Conclusions

Cost estimates for completing the Army's CSDP have doubled since 1985 and are likely to continue to grow. The preliminary estimate of $1.7 billion grew to more than $3.4 billion by 1988. Some of the cost growth to date can be attributed to (1) the addition of program enhancements designed, in part, to address concerns for maximized safety and (2) the fact that early estimates were based on incomplete information (the Army lacked completed designs and actual cost information from a comparable operating facility). Since current construction, equipment, and personnel requirements have continued to rise, total program costs will increase even more.

The Army plans to use contractors to construct and operate eight disposal facilities in the continental United States over a 9-year period. Using contractors will increase the importance of the Army's timely cost analysis and control. Close management attention over the cost estimating process will be needed to maintain effective control over future multibillion dollar expenditures for this program.

Recommendation

We recommend that the Secretary of the Army ensure that accurate and complete cost information is developed to effectively control future program expenditures.

The Army's Chemical Stockpile Disposal Operations May Not Be Completed on Time

The Army's chemical stockpile disposal program has encountered several setbacks, which may prevent the successful completion of the disposal operations by April 1997. The Army believes that the congressionally mandated 1997 completion date is in jeopardy for the following reasons: (1) its fiscal year 1990 procurement request was not fully funded; (2) an environmental permit obtained from the state of Utah requires that the disposal facility in that state periodically operate at less than full capacity; and (3) the schedule was delayed to permit incorporating the lessons learned from the Johnston Atoll disposal plant into the design and construction of the continental U.S. disposal facilities.

In addition to these setbacks, the Army will likely encounter additional obstacles in obtaining environmental permits and dealing with opposition in some states where future disposal facilities are planned. The Army's disposal plant construction schedule, which must be followed to achieve the 1997 completion date, does not allow state agencies sufficient time to review applications and issue the required environmental permits. In particular, it appears unlikely that the necessary permits can be obtained in time to start construction of the Anniston, Alabama, facility in September 1991. Consequently, the Army could delay the award of the construction contract and the issuance of some equipment purchase orders until fiscal year 1992.

Moreover, potential problems may delay the start of construction at three of the four sites the Army planned to begin in fiscal year 1992. These potential problems include opposition from local citizen groups and stringent regulations and requirements imposed by two of the states for acquiring the necessary environmental permits.

Events Influencing the Army's Belief That the Completion Date Will Not Be Met

The Army believes that several factors have adversely affected its ability to meet the mandated April 30, 1997, disposal completion date: (1) its fiscal year 1990 procurement funding request was cut by $37 million, adversely affecting equipment acquisition and installation for the Tooele, Utah, site and design efforts for some follow-on sites; (2) Utah's environmental permit will require the Army to periodically operate the facility at 50 percent of capacity; and (3) a 9-month delay in the start of congressionally mandated operational verification testing for the Johnston Atoll facility will extend the schedule for incorporating lessons learned into the design of continental U.S. facilities.

According to the Army, the $37 million reduction in fiscal year 1990 procurement funding will delay the acquisition of some plant equipment, which will in turn cause a 12-month delay in completing the construction and implementation of disposal operations at Tooele, Utah. Further, the Utah environmental permit contains a provision requiring the Army to conduct up to 12 test burns. While the state analyzes the trial burn data, the facilities can operate at only 50 percent of their capacity. The Army did not anticipate that the permit would contain such a stringent requirement when it made up its completion schedule for Tooele. Since the Tooele facility was already scheduled to operate through April 1997, these additional requirements will likely extend the Tooele operations beyond the congressionally mandated completion date.

Public Law 100-180, enacted in December 1987, requires the Army to conduct operational verification testing of the disposal technology. The Army's March 1988 implementation plan states that, with the exception of the Tooele plant, final facility design and construction of the disposal plants will be scheduled to take advantage of lessons learned from the Johnston Atoll operational testing. Because of a 9-month delay in the start of operational verification testing at Johnston Atoll, the Army believes that the overall program has slipped and that therefore the complete disposal of the chemical weapons stockpile by April 1997 is improbable.

Environmental Requirements Must Be Met Before Construction Can Begin

The Army's construction start dates are contingent upon the issuance of the following mandatory environmental permits for each of the proposed sites.

The Resource Conservation and Recovery Act (RCRA) of 1976 (Public Law 94-580) establishes the guidelines for the treatment, storage, or disposal of hazardous wastes. The physical construction of a new hazardous waste management facility cannot begin without an RCRA permit. Review and approval authority for RCRA permit applications has been delegated by EPA to applicable state regulatory agencies.

Air permits are also required for disposal facilities to certify that they abide by the Clean Air Act Amendments of 1977 (Public Law 95-95), which establish national emissions standards for hazardous air pollutants. Each state will issue a separate air permit, except for Maryland, where the air permit requirements will be incorporated into requirements for the RCRA permit.

The National Environmental Policy Act of 1969 (Public Law 91-190) requires the Army to develop an environmental impact statement on the environmental effects of destroying the chemical stockpile. Because the CSDP could affect 20 different states, the impact was initially assessed on a "programmatic" basis—taking into account the collective impact of all disposal sites—starting in January 1986. During the development of the programmatic environmental impact statement, the Army considered the risk to the public of destroying its stockpile (1) at a national site, (2) at two regional sites, and (3) on-site at each storage location. A draft of the impact statement was provided to the public, and the Army was required to address the public's comments. In February 1988, the Army made public its Record of Decision, selecting on-site destruction as the preferred alternative because it posed the least risk to public health and the environment. Additionally, the Army believed that on-site disposal posed the least risk of sabotage and terrorism and provided the greatest benefits for enhanced emergency preparedness.

Before beginning construction at any site, the Army must collect detailed environmental information specific to that site, compare it to the data gathered during the programmatic study, and then submit a site-specific environmental impact statement for each site. The Army also is required to issue another formal Record of Decision prior to the start of construction at each of the sites, again selecting the preferred method of destruction.

RCRA Process

The RCRA permit is the most difficult of all the environmental permits that the Army must obtain. RCRA permit application requirements include providing a general facility description, chemical and physical analyses of waste to be managed, security procedures, a contingency plan listing procedures during emergency operations, and other operational support data. Additional information must be provided on how waste will be stored, such as a description of containers and procedures for managing, inspecting, and tracking each waste container while it is in storage. Incineration data, such as data on the demonstration of performance standards at specific operating conditions, particulate emission limits, monitoring procedures, and trial burn schedules, must also be included in the application. The Tooele RCRA documentation, for example, contained 14 volumes of data.

The RCRA process begins when an application is submitted to the state. The state's review of the application results in a notice of deficiencies usually within 3 months. The applicant must then revise and resubmit

the application. This process continues until the state accepts the application. A draft permit is then prepared by the state and is sent to the federal EPA and its regional offices for comments; this exchange can be completed in approximately 3 months. After incorporating EPA's comments, the state finalizes the draft and issues a public notice of intent to issue an RCRA permit; this process takes about 1 month. A public comment period is held for 45 days, and a public hearing is held if requested by any concerned citizen. If there is a hearing, an additional public comment period of 15 days must be provided. The state then takes about 45 days to finalize the permit and issue a notification of intent to issue a permit authorizing the start of construction. The permit is not effective until 30 days after the notification of intent is issued. During this period, the public can appeal the pending issuance of the permit. According to state officials, these time frames apply only if the application is being reviewed full-time and there is no public appeal.

Army's Schedule for Obtaining Environmental Permits Is Unrealistic

In September 1986, the Army submitted individual RCRA permit applications for the Pine Bluff, Umatilla, and Anniston facilities. The Army plans to resubmit final RCRA applications for Anniston in May 1990 and for Pine Bluff and Umatilla in August 1990. According to the Army, these applications cannot be resubmitted sooner because schedules for Army contractors preparing facility designs and permit applications cannot be further expedited.

The Army plans to begin construction of the Anniston facility in September 1991 but will be able to do so only if the state issues a final RCRA permit by August 1991 (15 months after the date of submission). The planned start date of construction for the Pine Bluff and Umatilla sites was deferred from September 1991 to June 1992. The new start date allows the Arkansas and Oregon state agencies 22 months to review, process, and issue RCRA permits.

Army officials told us that some state environmental regulatory agencies had already informed the Army that the amount of time it had allotted for reviewing and processing the RCRA permit applications was not sufficient. They said that, as a result, they planned to meet with the state agencies to determine whether the review and approval process could be expedited. We were told that if the states agree, the Army might consider providing funds for the states to hire consultants or additional employees to work on the RCRA applications.

State officials responsible for RCRA programs at four of the eight sites, including Anniston and Pine Bluff, told us that the Army's schedule should allow 24 to 36 months between the time the Army submits its final RCRA applications and the time of permit issuance. For example, officials from the Arkansas Department of Pollution Control and Ecology told us that it would most likely take 2 years to issue an RCRA permit for the Pine Bluff Arsenal after the application is resubmitted. Therefore, final RCRA approval will probably not occur until fiscal year 1992. The Army's recent decision to defer a request for funding for the construction of its Pine Bluff facilities to fiscal year 1992 appears to have been a prudent decision, based on the 24-month period needed for reviewing, processing, and issuing the environmental permits for that site.

Army officials told us that the Alabama Department of Environmental Management has informed them that the Army should allow 24 to 30 months for the review and approval of the RCRA application for the Anniston facility. Therefore, if the Army submits its final RCRA application in May 1990—in accordance with its current schedule—the earliest an RCRA permit would be granted appears to be May 1992. This date would be a full 9 months after the Army's target date of August 1991.

State officials informed us that the review of the application for the Anniston Army Depot will require substantial involvement by approximately 40 percent of their engineering staff in the Hazardous Waste Division. The Army already has three RCRA applications pending for other activities at the depot, and the limited number of state agency staff cannot be completely devoted to the Army. State officials also told us that their agency will not allow the Army to provide funds for consultants to facilitate the state's review of the Army's RCRA application. They believe that a consultant's review of the Army's application would not be as independent or critical as the state's review.

The Kentucky Department for Environmental Protection may ask the Army to provide voluntary funding to hire someone to help in the review and processing of the Lexington-Blue Grass Army Depot RCRA permit application. Army officials told us that other states charge a processing fee for RCRA permits, but Kentucky state law prohibits it from charging the federal government a fee.

Community Opposition and Environmental Requirements Could Delay the Construction of Additional Sites

Construction could be delayed at three sites (Lexington-Blue Grass, Aberdeen, and Newport) because of community opposition to the on-site incineration of lethal chemicals and at two sites because of added restrictions imposed by regulatory agencies.

Public comments from community representatives at the eight CSDP sites were published in the January 1988 Final Programmatic Environmental Impact Statement. While a few citizens from Arkansas and Oregon made comments in support of the Army's on-site incineration plans, numerous citizens from Maryland, Kentucky, and Indiana voiced concerns and arguments against these plans.

Community opposition in Kentucky is particularly strong and well organized. Opposition groups in Kentucky include key political, academic, and civic leaders who have continued their fight against the Army's plans to build an incinerator in their state. We were told that these citizens are prepared to do whatever it takes (including taking legal action) to halt on-site incineration plans. They want the Army to transport the stockpile to a less populated area for disposal. The presence of such organized opposition, particularly in Kentucky, could impede the successful completion of the stockpile disposal program by April 1997.

Restrictions Imposed by Regulatory Agencies May Delay the Issuance of Permits

In addition to organized citizen opposition, new state legislation in Kentucky and additional requirements in Maryland could prevent the Army from obtaining the needed environmental permits within the 15 months it has allotted for obtaining them. Such a delay could, in turn, result in postponed construction.

It appears unlikely that the Army will obtain environmental permits for the disposal facility at the Lexington-Blue Grass Army Depot in time to start construction in June 1992. Kentucky officials told us that the state of Kentucky has passed legislation that adds requirements to the environmental permit process. First, the Army will be required to demonstrate that incineration has been proven in a comparable facility for a "sufficient period of time" to provide assurance of 99.9999 percent destruction of each agent. Second, the Army must provide data from a similar incineration facility to demonstrate that emissions from the incinerator present no risk to human health or the environment. According to the Centers for Disease Control in Atlanta, Georgia, to demonstrate "no effect" (that the emissions do not cause cancer), one must

conduct a 30-year epidemiological study of persons living in a community surrounding an incinerator. Depending on how the language of the legislation is interpreted, the permit process could be delayed indefinitely.

An official from the Maryland Department of the Environment told us that two factors could delay the permit review process for the Aberdeen Proving Ground. First, the state of Maryland will require the Army to provide operating data from the Johnston Atoll and Tooele, Utah, facilities before the RCRA application will be reviewed. Second, the Army may have to address opposition from citizens in the Aberdeen area who would like chemical agents shipped to and incinerated at another site.

Funds Requested for Fiscal Year 1991 May Not Be Needed Until Fiscal Year 1992

The Army has requested almost $123 million in fiscal year 1991 funding for the Anniston disposal facility. This includes $64.5 million for the award of a contract to construct the disposal plant and upgrade depot facilities and $58.4 million to purchase critical equipment that requires a lengthy production and delivery time. Because of the probable delay in obtaining the required RCRA permit, the Army most likely will not benefit from the planned award of this construction contract or the issuance of most of the equipment purchase orders in fiscal year 1991. This same issue could affect the other facilities planned for later fiscal years.

The Army's current expectation of soliciting bids in March 1991 for a construction contract and beginning construction of the Anniston facility in September 1991 is based on the assumption that the State will review and approve an RCRA application in 15 months. Any delay in the approval of the RCRA permits beyond the 15-month allotted time scheduled by the Army would mean that the construction contract would not have to be awarded until fiscal year 1992. On the basis of the expected application submittal date of May 1990 and comments from state officials concerning the time needed to process the application, we estimate that the Army will not be permitted to begin construction until late fiscal year 1992. Accordingly, the $64.5 million in construction funding will probably not be needed for the award of a contract until fiscal year 1992.

Similarly, some of the $58.4 million requested for the fiscal year 1991 procurement of equipment may not be needed. For example, based on the Army's current schedule, the four incineration furnaces would not be needed at the construction site until mid-fiscal year 1993. Based on

the established procurement lead times, orders for these furnaces could be deferred from fiscal year 1991 to 1992.

The Army recently delayed the expected start of construction for the Pine Bluff and Umatilla facilities from September 1991 to June 1992. While this gives the states several additional months to review the RCRA applications, the total time available is still less than state officials believe will be needed.

Unless the Army establishes realistic target dates for the issuance of required environmental permits, bids for construction contracts could be prematurely solicited, and equipment could be obtained before it is needed.

Conclusions

The Army probably will not complete its chemical stockpile disposal operations by April 30, 1997, as mandated by the Congress. The Army cites several reasons that it believes this completion date is now improbable. In addition to those reasons, we also believe that the Army's expectation of acquiring state-approved environmental permits in an unusually short time is unrealistic. If permits are not obtained as planned, the start of construction and the ultimate completion of the stockpile disposal will be delayed. Unless the Army can arrange for an expedited review and approval of its RCRA applications, it should adjust its schedule for awarding construction contracts and placing orders for plant equipment. To expedite the review process, the Army is considering providing funds to the states, if the states agree, for hiring extra employees or consultants to review the applications. However, questions can be raised about the independence of these individuals, the appearance of a conflict of interest, and the extent to which the employment of such individuals will expedite the review and approval process. Citizen opposition in some states may also prevent the Army from completing its disposal program by April 30, 1997.

Recommendations

We recommend that the Secretary of the Army direct procurement officials not to solicit bids for the construction contracts or issue equipment purchase orders for any of the remaining disposal facilities until realistic dates can be established for receipt of all required environmental permits.

We also recommend that the Secretary of the Army prohibit the use of Army funds for the hiring of consultants or other personnel by state

regulatory agencies to assist in the review of permit applications unless it can be determined that (1) such action will sufficiently expedite the RCRA application process to permit the Army to complete the disposal program by April 1997 and (2) the use of Army funds for this purpose will not, or in any way appear to, compromise the independence of the review process.

The Army's Plans to Upgrade Emergency Preparedness Before the Start of Disposal Operations

The Army's progress toward assisting local communities to prepare for emergencies at the planned disposal sites has been slow. Its goal is to have emergency preparedness plans implemented and equipment installed in the communities surrounding the eight sites before disposal operations begin. The March 1988 implementation plan for the stockpile disposal program, published by the Army, stated that the major portion of its upgrades to local emergency planning and equipment was to be completed by 1991. Army officials recently told us that it is likely that the completion date will be delayed until December 1992.

The Army's March 1988 cost estimates for this program totaled $114 million, about $65.8 million of which Army officials told us has been appropriated.

Origins of the Emergency Preparedness Program

The Emergency Preparedness Program was developed to fulfill two legislative requirements. First, the Army's decision to upgrade emergency preparedness was made to mitigate the potential environmental impacts of the CSDP pursuant to the National Environmental Policy Act. Second, the Congress directed, in Public Law 99-145, that the disposal program provide maximum protection for the environment, the general public, and the personnel involved in the destruction of the chemical stockpile.

The emergency preparedness program was also initiated in response to public opinion. Emergency response and preparedness became high priority concerns for the Army because during the public hearings on its overall programmatic environmental impact statement, these issues were the most frequently mentioned concerns.

Community representatives focused on the need for an emergency preparedness program because most of these communities had little or no emergency response capability. For instance, Talladega County, Alabama (near the Anniston Army Depot), has virtually no emergency response equipment.[1] According to Talladega County officials, if an accident occurred today, their only recourse would be to send someone out to verbally warn people about the emergency. Similarly, officials in Kentucky stated that in the event of an accident there would be total confusion and panic because residents and medical and emergency response personnel are not prepared or trained to handle a chemical emergency.

[1]Emergency response equipment includes sirens, radios, dedicated telephone lines, and beepers.

After hearing the public's concerns about emergency preparedness, the Army determined that a program to upgrade emergency response capabilities in the areas surrounding the eight sites was essential. After working with the Federal Emergency Management Agency, the EPA, and the Department of Health and Human Services, the Army published an emergency response concept plan in July 1987. This preliminary plan called for the development of site-specific plans for each of the eight locations.

In March 1988, the Army estimated that the cost of the emergency upgrade program would be $114 million. The Army will provide funds to the local communities surrounding the eight planned disposal sites. These funds will be administered through the Federal Emergency Management Agency and sent to state emergency management agencies and then to local county emergency management agencies. The money will be used in accordance with guidelines established by the Federal Emergency Management Agency to augment current emergency preparedness capabilities.

To facilitate communications at all levels, the Army created national and local Intergovernmental Consultation and Coordination Boards. These boards are intended to facilitate the exchange of information among program participants. The membership list for the national board includes representatives from the Army, EPA, the Federal Emergency Management Agency, the Department of Health and Human Services, and local communities. Local board members include regional representatives from these same federal agencies; Army, state, and local officials; and community representatives.

Previous Delays in Program Execution

Since the Army implemented its program to upgrade emergency preparedness in 1988, it has been behind schedule in meeting its milestones. A program schedule dated March 1989 indicates that the Army anticipated that its management plan would be finalized no later than April 1989. However, it now hopes to have the management plan finalized by early 1990. The Army also originally expected to have completed guidelines for the development of site-specific emergency preparedness plans and standards and criteria manuals by September 1989. A draft of the planning guidance document was distributed in November 1989; however, the standards and criteria manual has not been developed. The Army anticipates having portions of the standards and criteria manual completed by late spring 1990 and the entire document completed by the end of fiscal year 1990. In March 1989, the

Army also estimated that it would acquire and install emergency response equipment at the eight sites between December 1989 and June 1991. Now it estimates that this work will not be completed until December 1992.

Despite these delays, the Army has attempted to expedite the preparedness program. For example, it held a conference in November 1989 at Park City, Utah, at which key officials from the Army, the Federal Emergency Management Agency, and state and local governments met to discuss various aspects of the program plan. Prior to this meeting, local planners had little or no guidance from the Army on how to proceed with their efforts. Several local planning officials thought that this event marked a turning point for the emergency preparedness upgrade process because it was the first time that the Army had provided local planners with a substantial amount of guidance or assistance.

Status of Local Planning Efforts

Local planners have recently started working on local site-specific emergency preparedness plans. We visited four of the eight local communities and found that planners had recently been hired and had devoted time to setting up their offices. In general, local planners could not begin their site-specific work until after the Park City conference when they received some written guidelines and instructions from the Army. Some of the planners reported that since the conference, they have been actively developing site-specific plans. While some planners are assessing preliminary equipment and funding needs, others do not plan to make these assessments until they receive further information from the Army and various technical studies.

Many of the technical aspects of the emergency preparedness upgrade program are currently being studied by contractors. Contractors have completed pre-engineering studies on the alert and notification equipment needs at each site. However, they have not yet completed final studies on the siting and placement of equipment and computer systems and other issues.

Conclusions

The Army expects to have completed all its upgrades of emergency preparedness by the end of 1992 and prior to the scheduled start of disposal operations at each site. Finalizing its emergency preparedness management plan, planning guidelines, and the standards and criteria manual is a critical step in reaching this goal. Establishment and adherence to milestones for the completion of site-specific engineering studies,

completion of equipment procurement specifications, and acquisition and installation of that equipment are also needed to prevent further slippage in the emergency preparedness program, which could delay the start of chemical disposal operations at the eight continental U.S. sites.

Recommendations

We recommend that the Secretary of the Army require the Deputy for Chemical Demilitarization to (1) take action to ensure the timely completion of all emergency preparedness plans, guidelines, studies, and manuals, as well as the acquisition and installation of equipment, and (2) report periodically on the progress being made in achieving key milestones at each disposal site.

Chemical Stockpile Disposal Program Facilities Could Be Used for Other Purposes

Public Law 99-145, dated November 1985, specifies that all CSDP buildings and equipment must be dismantled after the chemical munition and agent stockpile is destroyed. However, a November 1989 report by the House and Senate Appropriations Committee of Conferees directed the Army to study the feasibility and desirability of using CSDP plants for other purposes. The Army plans to have a contractor investigate the technical feasibility and desirability of using the incineration plants for other purposes after the chemical munitions and agents are destroyed. During our visit to selected stockpile storage areas, we identified some potential for the expanded use of these facilities.

Legislation Prohibits the Use of CSDP Facilities for Other Purposes

In its May 1984 report, the National Academy of Sciences stated that chemical stockpile destruction costs could be minimized if the Army explored alternative uses for the incineration plants after completion of their primary mission. According to the Academy, the use of CSDP incinerators to dispose of other hazardous wastes should be evaluated before final facility designs are completed. The Army did not assess the Academy's recommendation because legislation passed by the Congress in November 1985 prohibited the use of the facilities for any purpose other than the destruction of obsolete chemical munitions and agents.

The November 1985 legislation specifies that chemical stockpile disposal facilities may not be used for any purpose other than the disposal of lethal chemical munitions and that when the stockpile destruction is complete, the facilities should be cleaned, dismantled, and disposed of in accordance with applicable laws and regulations. The Army has interpreted this legislation to mean that both buildings and equipment should be destroyed and rendered useless.

Congressionally Directed Study of Other Possible Uses

In November 1989, the House and Senate Appropriations Committee of Conferees directed the Army to investigate and report on the feasibility and desirability of using the disposal facilities for other purposes after the stockpile is destroyed. The Conferees did not specify a time frame for completing the study and submitting the report to the Committee. In requesting the study, the Conferees recognized that the continued use of the facilities after stockpile destruction could require design changes to the furnaces before they are purchased and installed at the disposal sites.

In January 1990, Army officials told us that they planned to have a contractor complete the congressionally directed study. In earlier conversations, program officials told us that they were reluctant to initiate such a study because the public has been told repeatedly that the CSDP incinerators will not be used for any purposes other than the destruction of obsolete chemical munitions and agents. The contractor's study is expected to be completed by the end of 1990.

Disposal Facilities Could Be Used for Other Purposes

During our visit to selected chemical stockpile storage areas, we identified the following possible uses for the disposal plants after the chemical munitions stockpile is destroyed:

- The Edgewood area of Aberdeen Proving Ground has accumulated a large number of empty 1-ton containers, some of which at one time contained lethal chemical agents. Army officials told us that since they no longer contain agents, these containers are not considered part of the chemical munitions stockpile and as such may not be processed through CSDP facilities. Army officials also told us that the scrap value of the empty containers could exceed several million dollars. However, before they can be sold, they must be thermally treated. The CSDP plants have been designed to thermally process containers after agents are removed from them; however, containers that are now empty are not considered part of the stockpile and for that reason cannot be processed through CSDP facilities.
- The Edgewood area of Aberdeen Proving Ground is also dismantling an unneeded pilot-scale chemical production plant. Many of the metal parts being removed from the building were possibly contaminated during the past production of various chemical agents. To decontaminate these metal parts, the Army plans to request fiscal year 1993 and 1994 funding totaling $13.6 million for the construction of a separate incineration facility. The cost of designing and acquiring the necessary environmental permits prior to construction will cost an additional $1.2 million. Some of these expenditures could be avoided if the Army were allowed to use the CSDP facility to accomplish the necessary decontamination.

Conclusions

The chemical stockpile disposal facilities have greater potential uses than current legislation allows. Efficiency would dictate that this expanded use be encouraged, particularly in view of the Army's existing plans to construct separate incinerators within the same general area of at least one CSDP facility.

Recommendations

If the congressionally directed study demonstrates that CSDP disposal facilities could be safely and efficiently used for the destruction of other hazardous wastes, we recommend that the Secretary of Defense sponsor a request for a legislative change that would allow such usage.

We also recommend that, regardless of the study's results, the Secretary of the Army propose an amendment to the existing legislation that would allow the CSDP incinerators that the Army plans to build in Aberdeen, Maryland, to be used to decontaminate and thermally treat empty 1-ton containers and metal parts removed from a former chemical production plant.

Major Contributors to This Report

National Security and International Affairs Division, Washington, D.C.	John R. Henderson, Assistant Director Derek B. Stewart, Advisor
Philadelphia Regional Office	M. Glenn Knoepfle, Evaluator-in-Charge Marianne T. Rullo, Evaluator Naveena D. Bembry, Evaluator

Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202 275 6241

The first five copies of each report are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.